

B4
cmcl 8.

touchdown bearing; a corrugated plate-shaped damper disposed in an annular gap between the touchdown bearing and the retainer member; and positional offset preventing means for preventing axial positional offset of the corrugated plate-shaped damper.

ADDITIONAL FEES:

No additional fees are believed required; however, should it be determined that a fee is due, authorization is hereby given to charge any such fee to our Deposit Account No. 01-0268.

REMARKS

In the last Office Action, claims 1 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,739,609 to Ueyama et al. ("Ueyama") in view of French Patent No. 2,614,375 to Brunet ("Brunet"). According to the Examiner, Ueyama discloses the claimed subject matter except for a corrugated plate-shaped damper disposed in an annular gap between the touchdown bearings and a retainer. Brunet was cited as disclosing a magnetic bearing apparatus having a corrugated plate-shaped damper 44 disposed in annular gap between a touchdown bearing 3 and a retainer 1 and having positional offset preventing means (i.e., the

friction fit with the retainer) for the purpose of reducing the potential damages to the rotor and the landing bearing during over-speed conditions. According to the statement of rejection, it would have been obvious to one having ordinary skill in the art at the time the invention was made to design the magnetic bearing apparatus of Ueyama to provide a corrugated plate-shaped damper disposed in an annular gap between the touchdown bearings and the retainer as taught by Brunet for the purpose of reducing the potential damages to the rotor and the landing bearing located at the shaft end during over-speed conditions.

Claims 2, 3 and 7-10 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as their invention. Claims 2, 3 and 7-10 were indicated to be allowable if rewritten to overcome the rejection under 35 U.S.C. §112, second paragraph and to include all of the limitations of the base claim and any intervening claims. Claims 4, 5 and 11 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12-20 were allowed.

The drawings were objected to as not showing every feature of the invention specified in the claims. In particular, the Examiner stated that the positional offset preventing means as recited in claim 1, and the concave portion formed in an inner circumferential surface of the retainer member as recited in claim 4 must be shown in the drawings or these features canceled from the claims.

Acknowledgement was made of applicants' claim for priority under 35 U.S.C. 119, and the Examiner acknowledged that a certified copy of the priority document has been filed in parent application No. PCT/JP00/02062 filed March 31, 2000.

In accordance with this response, independent claim 1 has been amended to clarify that the positional offset preventing means prevents axial positional offset of the corrugated plate-shaped damper, thereby clearly patentably distinguishing the claim from the prior art. The specification has been amended to provide a cross-reference to applicants' corresponding international application and to provide a direct antecedent basis for the claim language. A marked-up version of the amended paragraphs of the specification and amended claim 1 is attached hereto and labeled **"VERSION WITH MARKINGS TO SHOW CHANGES MADE"**.

Applicants respectfully request reconsideration of their application in light of the foregoing amendments and the following discussion.

At the outset, applicants and applicants' attorney acknowledge with appreciation the allowance of claims 12-20 and the indication of allowable subject matter concerning claims 2-5 and 7-11. For the reasons explained below, applicants respectfully submit that amended claim 1 and dependent claim 6 also patentably avoid the prior art.

With regard to the drawing objections, applicants respectfully submit that the drawings do show every feature of the invention specified in the claims and, therefore, no amendment of the drawings is necessary. The drawings show three embodiments of positional offset preventing means for preventing axial positional offset (i.e., axial displacement) of the corrugated plate-shaped damper. In Fig. 1, the positional offset preventing means comprises a strip-like metal thin plate 10a (described on page 9 of the specification) interposed between a pair of corrugated plate-shaped damper members 8a and 8b. In the Fig. 2 embodiment, the positional offset preventing means comprises an annular convex portion 10b interposed between the pair of corrugated plate-shaped damper members 8a and 8b. In Fig. 3, the positional offset preventing means comprises an annular concave portion 10c formed in the retainer member 9 and in which is disposed a corrugated plate-shaped damper 8c. Thus the positional offset preventing means recited in claim 1 is

shown in each of the embodiments of Figs. 1-3. Fig. 3 shows the embodiment of the positional offset preventing means recited in claim 4, wherein the positional offset preventing means comprises an annular concave portion 10c formed in an inner circumferential surface of the retainer member 9 for receiving the corrugated plate-shaped damper 8c. Thus the drawings do show every feature of the invention specified in the claims, and no amendment of the drawings is necessary.

Applicants also respectfully traverse the rejection of claims 2, 3 and 7-10 under 35 U.S.C. §112, second paragraph for being indefinite for failing to particularly point and distinctly claim the subject matter which applicants regard as their invention. In claim 2, line 3, the Examiner suggests changing "a pair of corrugated plate-shaped damper members" to --said corrugated plate-shaped damper members--. Such a change would be inaccurate since base claim 1 recites a corrugated plate-shaped damper -- not a pair of corrugated plate-shaped damper members. In claim 2, line 4, the Examiner contends that "the positional offset preventing means" lacks antecedent basis since the specification clearly indicates two different position offset preventing means. The Examiner's objection is not well founded since base claim 1 recites "positional offset preventing means" and therefore clearly provides antecedent basis for "the positional offset

preventing means" recited in claim 2. Independent claim 1 is generic to the three embodiments of positional offset preventing means shown in Figs. 1-3, respectively, whereas claim 2 is directed to the embodiment shown in Fig. 1.

Likewise, in claim 3, "a pair of corrugated plate-shaped damper members" cannot be changed to --said corrugated plate-shaped damper members" on lines 3 and 7 as proposed by the Examiner because base claim 1 does not recite a pair of corrugated plate-shaped damper members. Similarly, "the positional offset preventing means" on line 3 finds antecedence in base claim 1. Claim 3 is directed to the embodiment shown, for example, in Fig. 2 wherein the positional offset preventing means comprises an annular convex portion 10b formed in an inner circumferential surface of the retainer member 9 for separating the pair of corrugated plate-shaped damper members 8a and 8b.

While claims 7-10 were rejected under 35 U.S.C. §112, second paragraph, the Examiner has not indicated any portion of these claims which is indefinite or which fails to particularly point out and distinctly claim the subject matter of the invention.

Applicants respectfully submit that the claims, as presently worded, are clear and definite and in full compliance with the requirements of 35 U.S.C. §112, second paragraph.

Lastly, applicants respectfully traverse the rejection of claims 1 and 6 under 35 U.S.C. §103(a) as being unpatentable over Ueyama in view of Brunet. Amended base claim 1 specifies that the positional offset preventing means prevents axial positional offset of the corrugated plate-shaped damper. Thus in the case of Fig. 1, for example, the positional offset preventing means 10a is interposed in an axial direction between the corrugated plate-shaped damper members 8a and 8b of the corrugated plate-shaped damper and effectively prevents axial displacement or axial positional offset of the damper. No corresponding structure is disclosed or suggested by the prior art.

As acknowledged by the Examiner, Ueyama discloses a magnetic bearing apparatus having touchdown bearings 8 and 9 supported by a retainer member 1. However, Ueyama does not disclose positional offset preventing means for preventing axial positional offset of a corrugated plate-shaped damper disposed in an annular gap between the touchdown bearings and the retainer. Neither does Brunet.

Brunet discloses a magnetic bearing apparatus having a corrugated plate-shaped damper 44 disposed in annular gap between a touchdown bearing 3 and a retainer 1 for preventing radial positional offset of the plate-shaped damper 44 -- but not for preventing axial positional offset axially of the

damper 44. Insofar as pertinent to the present invention, Brunet is similar to the prior art magnetic bearing apparatus shown in Fig. 5 of the application drawings. In both cases, no positional offset preventing means is provided for preventing a positional offset axially of the corrugated plated-shaped damper as required by claim 1. The purpose of the positional offset preventing means according to the invention is to prevent axial displacement of the damper. Insofar as can be determined, there is no disclosure in Brunet of any means for preventing axial displacement of the damper 44.

Moreover, the "positional offset preventing means" recitation of claim 1 invokes 35 U.S.C. §112, sixth paragraph and must be given the broadest reasonable interpretation in light of and consistent with the written description of the invention in the application. In re Donaldson Co., 29 USPQ2nd 1845 (Fed. Cir. 1994). Thus the positional offset preventing means of claim 1 covers the structure described in the application and equivalents thereof. When interpreted in this light, it is clear that the friction fit of the corrugated plate-shaped damper 45 with the retainer 1 (referred to by the Examiner) does not correspond in any sense to the structure described in the application as constituting the positional offset preventing means, or equivalents of that structure. As

noted above, Brunet discloses the same structure as described in the application as prior art with reference to Fig. 5 of the application drawings.


In view of the foregoing, the application is now believed to be in allowable form. Accordingly, favorable reconsideration and passage of the application to issue are respectfully requested.

Respectfully submitted,

ADAMS & WILKS

Attorneys for Applicants

By:


Bruce L. Adams
Reg. No. 25,386

50 Broadway - 31st Floor
New York, NY 10004
(212) 809-3700

MAILING CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Commissioner of Patents & Trademarks, Washington, D.C. 20231, on the date indicated below.


Bruce L. Adams

Attorney Name

Signature

NOVEMBER 4, 2002

Date